

WANG CL, LIANG L. Reconsideration of the third-generation non-steroidal aromatase inhibitors in pediatrics[J]. Zhe Jiang Da Xue Xue Bao(Yi Xue Ban), 2020, 4(1):275-282. Chinese.

[26] Ingle JN, Cairns J, Suman VJ, et al. Anastrozole has an association between degree of estrogen suppression and outcomes in early breast cancer and is a ligand for estrogen receptor  $\alpha$ [J]. Clin Cancer Res, 2020, 26(12):2986-2996.

[27] 徐文珊, 黄鸣清, 陈修平, 等. 天然产物来源的芳香化酶抑制剂研究进展[J]. 时珍国医国药, 2012, 23(4):1008-1011.

XU WS, HUANG MQ, CHEN XP, et al. Research progress of aromatase inhibitors from natural products[J]. Shi Zhen Guo Yi Guo

Yao, 2012, 23(4):1008-1011. Chinese.

[28] García-Mateos D, García-Villalba R, Otero JA, et al. An altered tissue distribution of flaxseed lignans and their metabolites in Abcg2 knockout mice[J]. Food Funct, 2018, 9(1):636-642.

[29] 王冬生, 韩婧, 康文博, 等. 植物雌激素防治骨质疏松作用的机制进展[J]. 中国骨质疏松杂志, 2016, 22(5):632-640.

WANG DS, HAN J, KANG WB, et al. Research progress in the mechanism of phytoestrogens in the prevention and treatment of osteoporosis[J]. Zhongguo Gu Zhi Shu Song Za Zhi, 2016, 22(5):632-640. Chinese.

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· 病例报告 ·

# 后壁截骨治疗特殊髌臼后柱伴臼顶嵌顿压缩骨折 1 例

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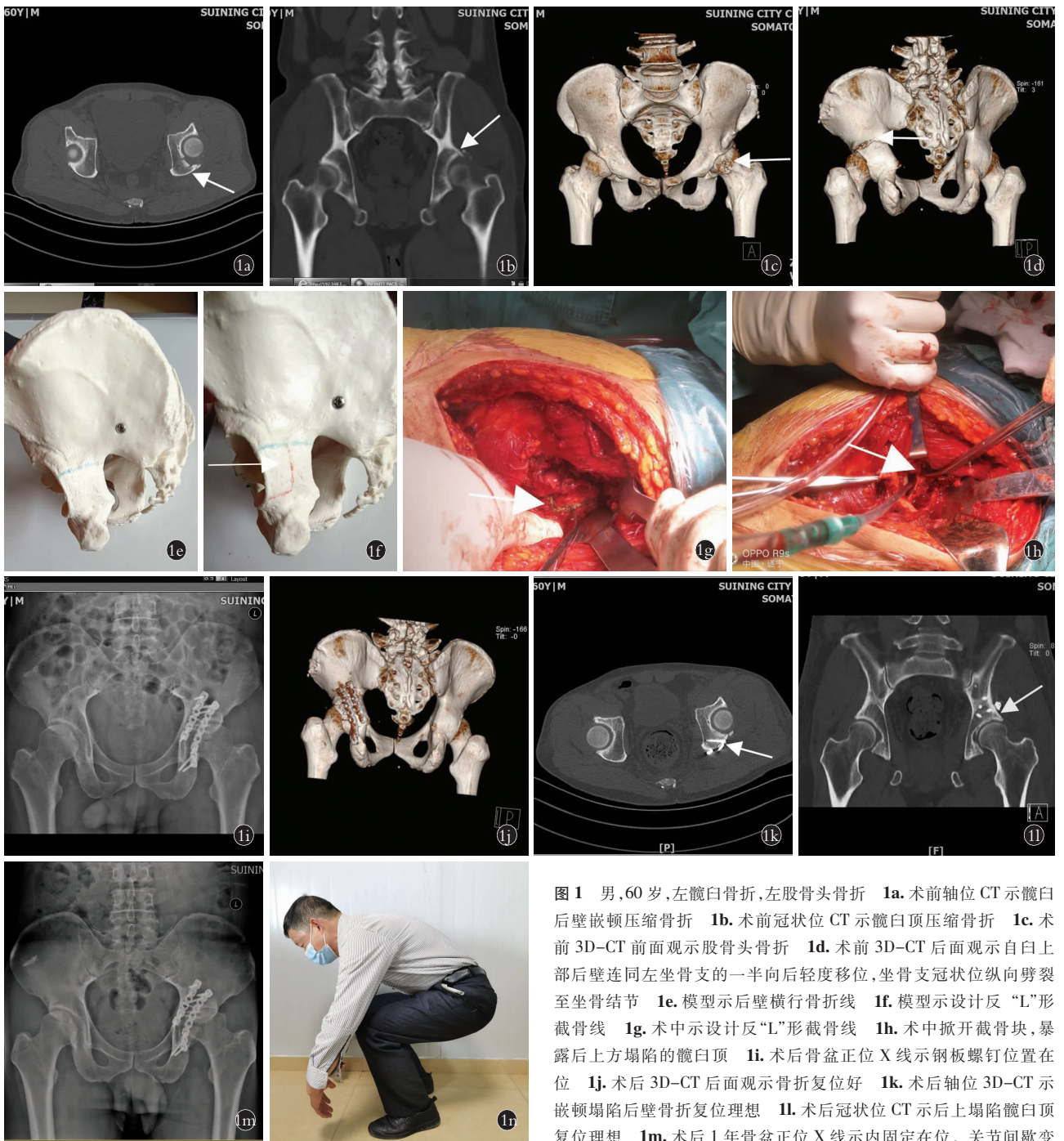
**Posterior wall osteotomy for treatment of a special posterior column of acetabulum with incarcerated compression fracture of acetabulum top: a case report** LIU Dong, WANG Zhi-qiang, YANG Bo, LI Lei, and WEN Yang. Department of Orthopaedics, Suining Central Hospital, Suining 629000, Sichuan, China

**KEYWORDS** Osteotomy; Acetabulum; Fractures; Case reports

患者,男,60岁,2020年2月因车祸伤后左髌部、左前臂疼痛伴活动受限1d入院。入院前1d患者发生车祸(具体机制不详),致左髌部、左前臂疼痛,伴活动受限,无法行走,伴左膝疼痛,伴头昏及胸壁疼痛,伤后无意识障碍、恶心呕吐、四肢麻木无力,无胸闷气紧、腹痛等。于当地县医院就诊,DR及CT提示左侧尺桡骨骨折,左侧髌臼骨折;腹部彩超提示:左侧脾挫伤。予以左前臂石膏固定,左髌臼关节脱位手法复位等治疗后转入我院。入院后专科查体:左髌部肿胀压痛,左髌部主动被动活动受限,远端感觉循环未见异常。左前臂石膏固定,远端感觉循环未见异常。行DR及CT提示左侧尺桡骨骨折,左侧髌臼骨折;腹部彩超提示左侧脾挫伤。骨盆DR线片显示左髌臼正位片见髌耻、髌坐线完整,泪点无移位。CT平扫轴位髌臼后方压缩骨折(图1a),冠状位髌臼

顶压缩骨折(图1b)。3D-CT前面观见股骨头骨折(图1c),后面观自臼上部后壁连同左坐骨支的一半向后轻度移位;坐骨支冠状位纵向劈裂至坐骨结节,坐骨结节完整(图1d)。入院诊断:左髌臼骨折,左股骨头骨折,左尺桡骨骨折。伤后7d取侧卧位Kocher-Langenback入路,切开外旋肌见髌周软组织挫伤,坐骨神经与周围组织轻度粘连,根据术前设计显露后壁横行骨折线(图1e),设计反“L”形截骨线(图1f),掀开截骨块,暴露后上方塌陷的髌臼顶(图1g、1h),截骨、骨折复位,空心螺钉固定,复位截骨块后2块钢板螺钉固定。手术时间2.5h,术后无坐骨神经损伤症状。术后复查骨盆正位DR片(图1i)示钢板螺钉位置在位;3D-CT后面观(图1j)示复位固定好,轴位(图1k)示嵌顿塌陷后壁骨折复位理想,冠状位(图1l)示髌臼后上塌陷髌臼顶复位理想。术后负压引流24h,3d后开始CPM关节锻炼。术后1年随访X线显示骨折内固定在位,左髌关节间歇变窄(图1m);左髌关节功能好(图1n)。

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**图 1** 男,60岁,左髋臼骨折,左股骨头骨折 **1a**.术前轴位CT示髋臼后壁嵌顿压缩骨折 **1b**.术前冠状位CT示髋臼顶压缩骨折 **1c**.术前3D-CT前面观示股骨头骨折 **1d**.术前3D-CT后面观示自髋臼上部后壁连同左坐骨支的一半向后轻度移位,坐骨支冠状位纵向劈裂至坐骨结节 **1e**.模型示后壁横形骨折线 **1f**.模型示设计反“L”形截骨线 **1g**.术中示设计反“L”形截骨线 **1h**.术中掀开截骨块,暴露后上方塌陷的髋臼顶 **1i**.术后骨盆正位X线示钢板螺钉位置在位 **1j**.术后3D-CT后面观示骨折复位好 **1k**.术后轴位3D-CT示嵌顿塌陷后壁骨折复位理想 **1l**.术后冠状位CT示后上塌陷髋臼顶复位理想 **1m**.术后1年骨盆正位X线示内固定在位,关节间歇变窄 **1n**.术后1年患者活动功能良好

**Fig.1** A 60-year-old male patient with left acetabular fracture and left femoral head fracture **1a**. Preoperative axial CT showed impacted compression fracture of posterior wall of acetabulum **1b**. Preoperative coronal CT showed acetabular roof compression fracture **1c**. The fracture of femoral head was observed in front of 3D-CT before operation **1d**. Before operation, 3D-CT showed that the upper posterior wall of the acetabulum and half of the left ischial branch moved slightly backward; Coronal longitudinal split of ischial branch to ischial tubercle **1e**. Model shows transverse fracture line of posterior wall **1f**. Model shows the design of reverse L-shaped osteotomy line **1g**. Reverse L-shaped osteotomy line is shown during operation **1h**. During the operation, open the osteotomy block to expose the collapsed acetabular roof **1i**. Postoperative pelvic X-ray showed that the plate and screw were in place **1j**. After operation, 3D-CT showed that the fracture was well reduced **1k**. Postoperative axial 3D-CT showed ideal reduction of impacted and collapsed posterior wall fractures **1l**. Postoperative coronal CT showed posterior superior collapse, ideal reduction of acetabular roof **1m**. One year after operation, pelvic X-ray showed that the pelvis was fixed in position and the joint became intermittently narrow **1n**. The patient has good activity function 1 year after operation

### 讨论

髋臼后柱伴后壁骨折是相对少见的髋臼骨折, Letournel<sup>[1]</sup>报道后柱伴后壁骨折占 2.7%。髋臼后部是维持髋关节稳定的重要结构,其骨质坚固厚实,强大的暴力才能损伤,往往为仪表盘损伤。由于暴力通过膝关节、股骨向后达到股骨头造成髋臼后方受力,导致髋臼后方骨折,由于髋、膝关节屈曲及股骨头旋转的角度不同,导致后方受力的部位不同。典型的髋臼后柱伴后壁骨折的骨折线从坐骨大切迹角部经臼内壁斜行至耻骨支并有臼后缘的骨折,闭孔可见骨折线。

(1)髋臼嵌顿压缩骨折的特点及受伤机制。本例患者的骨折线由坐骨大切迹角部经臼内壁或臼窝将坐骨支劈为前后两半,即冠状位劈裂。坐骨支前半部保持完整,闭孔无变形,耻骨下支无骨折,后柱骨折移位不大。与王钢等<sup>[2]</sup>报道的 2 例特殊类型复杂髋臼后部骨折类似,其 2 例患者均伴有坐骨神经损伤、无股骨头骨折。但该例患者无坐骨神经损伤症状,可能与患者伤后髋关节脱位早期复位有关。该患者有股骨头骨折,累及股骨头的前方,常用的股骨头骨折分型有 Pipkin 分型和 Brumbaek 分型<sup>[3]</sup>,均不能利用这两者分型得出结论。探讨其受伤机制考虑股骨头前部撞击后方髋臼顶,致股骨头前方骨折,髋臼顶压缩骨折,暴力继续释放致后柱冠状位劈裂骨折,股骨头后脱位。

(2)髋臼嵌顿压缩骨折的截骨方法。髋臼骨折累及髋臼顶,明显压缩有手术指征需要手术治疗<sup>[4]</sup>。髋臼骨折术后的疗效与复位质量密切相关<sup>[5-6]</sup>,如何解剖复位嵌顿压缩的后方髋臼顶是治疗的难点。髋臼后方受力需选择 Kocher-Langenbeck(K-L)手术入路<sup>[7]</sup>,既往文献多通过后壁截骨治疗嵌顿压缩的髋臼骨折。Putnis 等<sup>[8]</sup>介绍利用后壁骨折线“L”形截骨治疗 2 例复杂髋臼骨折伴后壁不全骨折、关节面压缩,随访术后恢复好。Schroeder 等<sup>[9]</sup>介绍后壁“U”形截骨治疗 3 例伴后壁嵌顿压缩骨折,获得解剖复位,术后没有创伤性关节炎等并发症。这些报道均没有股骨头骨折。Papachristos 等<sup>[10]</sup>介绍一种创新的方法截骨、部分关节囊切开、外科脱位复位固定股骨头骨折、复位固定臼顶嵌顿压缩骨折,该患者股骨头骨折位于前方顶部,实际也是利用后壁骨折线“L”形截骨,不同之处在于行外科脱位处理股骨头骨折。通过 K-L 入路暴露髋臼后方,找到髋臼后方的横行骨折线后行反“L”形截骨,距髋臼边缘约 2 cm,长约 3.5 cm,保护截骨块边缘的软组织,掀开截骨块,牵引股骨头,可看到塌陷的髋臼顶,予以截骨,以股骨头

为模板,复位植骨,空心螺钉固定。股骨头骨折累及前方非负重区,不影响髋关节稳定性,选择了非手术治疗<sup>[11]</sup>。最终随访 1 年,效果理想,髋关节功能好。

在临床中对于髋臼罕见的嵌顿压缩骨折,可以选择“L”形或“U”形截骨,截骨能够很好显示压缩骨折,有助于解剖复位,术后可取得良好的疗效。

### 参考文献

- [1] Letournel E. Acetabulum fractures:classification and management [J]. Clin Orthop Relat Res, 1980, (151):81-106.
- [2] 王钢,汪群力.特殊类型复杂髋臼后部骨折的诊断与治疗[J].中华创伤骨科杂志,2001,3(2):102-105. WANG G,WANG QL. Diagnose and treatment of peculiarripe of complicated posteriorfracture of acetabulum[J]. Zhonghua Chuang Shang Gu Ke Za Zhi,2001,3(2):102-105. Chinese.
- [3] 高悠水,孙玉强,张长青.股骨头骨折的诊治进展[J].中华骨科杂志,2016,36(6):361-369. GAO YS,SUN YQ,ZHANG CQ. Progress in diagnosis and care of fractures of the femoral head[J]. Zhonghua Gu Ke Za Zhi,2016,36(6):361-369. Chinese.
- [4] 周东生.髋臼骨折的治疗进展及思考[J].中国骨伤,2016,29(4):293-297. ZHOU DS. Progress and think on the treatment of the acetabular fractures[J]. Zhongguo Gu Shang/China J Orthop Trauma,2016,29(4):293-297. Chinese with abstract in English.
- [5] Verbeek DO,van der List JP,Tissue C,et al. Predictors for long-term hip survivorship following acetabular fracture surgery:Importance of gap compared with step displacement[J]. J Bone Joint Surg Am,2018,100:922-929.
- [6] 董伊隆,钱约男,刘良乐,等.髋臼骨折不同移位类型对手术治疗效果的影响[J].中国骨伤,2016,29(4):298-301. DONG YL,QIAN YN,LIU LL,et al. Effect of the different types of displacement of acetabular fractures on surgical treatment outcomes [J]. Zhongguo Gu Shang/China J Orthop Trauma,2016,29(4):298-301. Chinese with abstract in English.
- [7] Herman A,Tenenbaum S,Ougortsin V,et al. There is no column:a new classification for acetabular fractures[J]. J Bone Joint Surg Am,2018,100(2):e8.
- [8] Putnis SE,Dala-ali BM,Bircher M. Posterior wall osteotomy to facilitate reduction of complex acetabular fractures[J]. Injury,2007,38(10):1214-1217.
- [9] Schroeder AJ,Avilucea FR,Archdeacon MT. Posterior wall osteotomy of the acetabulum to access incarcerated marginal impaction[J]. J Orthop Trauma,2017,31(5):e163-e166.
- [10] Papachristos IV,Johnson JP,Giannoudis PV. Treatment of incarcerated impaction of acetabular fractures with concomitant osteochondral femoral head fractures by the use of a posterior wall osteotomy and surgical hip dislocation:A novel technique[J]. J Am Acad Orthop Surg,2019,27(24):e1086-e1092.
- [11] Scolaro JA,Marecek G,Firoozabadi R,et al. Management and radiographic outcomes of femoral head fractures[J]. J Orthop Traumatol,2017,18(3):235-241.

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